

AMENDMENT

Serial Number: 10/784,762

Filing Date: 02/23/2004

Title: Combine Tailings Sensor System

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IN THE CLAIMS

Please substitute the claim set below for the currently pending claim set. All intentional deletions are shown within brackets or as struck-through text. All intentional insertions are shown as underscored text. To the extent the claims listed below make other (i.e. unmarked) changes to the claims, such changes are unintentional and are made in error.

1. (currently amended) A system for sensing the presence of tailings in a combine, comprising:
 - a tailings sensor configured to generate a signal indicative of a flow rate of tailings; and
 - a first microcontroller module coupled to the tailings sensor and configured to receive the signal and filter it by clipping transient excursion noise; wherein the sensor is disposed adjacent a laterally-extending tailing auger between adjacent sidewalls of the combine.
2. (canceled).
3. (currently amended) The system of claim [[2]] 1, further comprising a second microcontroller module configured to receive the filtered signal and display it.
4. (original) The system of claim 3, wherein the first module is configured to notch filter the signal at a natural frequency of the tailings auger and to clip positive-going sensor signal excursions.
5. (original) The system of claim 4, wherein the first module is configured to low-pass filter the clipped sensor signal.
6. (original) The system of claim 5, wherein the second module is configured to display the low-pass filtered signal.

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7. (original) The system of claim 4, wherein the first module is configured to digitally identify local minima of successive sensor signal samples.

8. (currently amended) A method of sensing the presence of tailings in a combine, comprising the steps of:

detecting a flow of tailings in a laterally-extending tailings auger with a tailings sensor that is adjacent to the tailings auger and between adjacent sidewalls of the combine;

generating a signal indicative of the flow; and

filtering the signal to clip transient excursion noise.

9. (canceled).

10. (currently amended) The method of claim [[9]] 8, further comprising the step of displaying the filtered signal.

11. (original) The method of claim 10, wherein the step of filtering the signal includes the steps of:

notch filtering the signal at a natural frequency of the tailings auger; and

clipping positive-going sensor signal excursions.

12. (original) The method of claim 11, wherein the step of filtering further includes the step of low-pass filtering the clipped sensor signal.

13. (original) The method of claim 12, further comprising the step of displaying the low-pass filtered signal.

14. (original) The system of claim 8, wherein the step of filtering includes the step of digitally identifying local minima of successive sensor signal samples.

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15. (currently amended) A system for sensing the presence of tailings in a combine, comprising:

means for generating a signal indicative of a flow rate of tailings disposed adjacent to a laterally-extending tailings auger between adjacent sidewalls of the combine; and

a first microcontroller means for receiving the signal and for filtering it by clipping transient excursion noise.

16. (canceled).

17. (currently amended) The system of claim [[16]] 15, further comprising a second microcontroller means for receiving the filtered signal and displaying it.

18. (original) The system of claim 17, wherein the first microcontroller means includes means for notch filtering the signal at a natural frequency of the tailings conveyor and means for clipping positive-going sensor signal excursions.

19. (original) The system of claim 18, wherein the first microcontroller means includes means for low-pass filtering the clipped sensor signal.

20. (original) The system of claim 19, wherein the second microcontroller means includes means for displaying the low-pass filtered signal.

21. (original) The system of claim 18, wherein the first microcontroller means includes means for digitally identifying local minima of successive sensor signal samples.